UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,130	06/30/2000	Erik J. Shahoian	IMM1P086B	2149

7590 01/24/2003

Phil Albert, Esquire
Townsend & Townsend
Two Embarcadero Center
Eighth Floor
San Francisco, CA 94111

EXAMINER	
LESPERANCE, JEAN E	
ART UNIT	**PAPER NUMBER**
2674	

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,130	SHAHOIAN, ERIK J.	
	Examiner	Art Unit	
	Jean E Lesperance	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 June 2000 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 June 2000 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

The rejection of the previous Office Action is withdrawn and another Office action is provided below with the same prior art considering the filing date of Nov. 26, 1996.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-23 are rejected under 35 U.S.C. 102 (e) as being unpatentable over U.S. Patent # 6,259,382 ("Rosenberg").

As for claims 1, 11, and 12, Rosenberg teaches a core portion 110a of housing 104a preferably extends down the center of the housing 104a through the center of coil head 106a (column 15, lines 30-32) corresponding to a core member, said core member being grounded to a ground member; a coil head 106a includes a coil 112a which is wrapped around the coil head, similar to the coil 84a of Fig. 3a (column 15, lines 32-34) corresponding to a coil wrapped around a central projection of said core member; magnets 90 can be provided on one side of coil 84a, and the other magnet 90 can be similarly shaped piece of metal that provides a flux return path, preferably, a small amount of space is provided between the magnet surfaces and the coil 84a (column 13, lines 30-34) corresponding to a magnet head positioned so as to provide a gap between said core member and said magnet head, wherein said magnet head is moved in a degree of freedom based on an electromagnetic force caused by a current flowed through said coil; and a shaft 120a' that is coupled to a flexible member 130a, flexible members 130a and 130b are preferably made of a resilient material such as flexible plastic, rubber, metal, or the like and can flex in a degree of freedom.... (column 16, lines 20-26) corresponding to an elastic material positioned in said gap between said magnet head and said core member, wherein said elastic material is compressed and sheared when said magnet head moves and substantially prevents movement of said magnet head past a range limit, said range limit based on an amount to which said elastic material may be compressed and sheared.

As for claim 2, Rosenberg teaches a rubber material (column 16, line 22) which can be a rubber foam corresponding to elastic material is foam.

As for claim 3, Rosenberg teaches a capstan drive mechanisms 48 that can be provided to transmit forces and motion between electromechanical transducers 51 and the user object 12, capstan drive mechanisms 48a and 48b provide mechanical advantage for forces generated by the actuators without introducing substantial friction and backlash to the system (column 11, lines 33-38) corresponding to said actuator is driven by a drive signal that causes said magnet head to oscillate and produce a vibration in said ground member.

As for claim 4, Rosenberg teaches a resilient material such as a flexible plastic or the like and can be flex in a degree of freedom (column 16, lines 22-23) corresponding to at least one flexible member coupled between said magnet head and said ground member, said flexible member flexing to allow said magnet head to move in said degree of freedom.

As for claims 5-7 and 13-15, Rosenberg teaches a housing 104a that is grounded relative to object 12, flexible member 130b bends toward or away from the actuator 102a (depending on the object direction along axis X) to allow the translation of object 12 (column 16, lines 40-44) corresponding to at least one flexible member is coupled between said magnet head and a ground surface to which said core member is coupled.

As for claims 8 and 16, Rosenberg teaches a magnetic fields from magnets 90 interact with the magnetic field produced from wired coil 84a when current is flowed in coil 84a to produce a linear force to board 72 in direction parallel to axis Y shown by

arrow 78b (column 13, lines 60-63) corresponding to said degree of freedom of said magnet head is linear.

As for claims 9 and 17, Rosenberg teaches a rotary joint 124a couples shaft 120a to joint member 122a and allows joint member 122a to rotate about floating axis Z, a second end of joint member 122a is rotatably coupled to a second end of joint member 122b by a rotary joint 126 which provides an axis of rotation Z3 (column 15, lines 50-54) corresponding to said degree of freedom of said magnet head is rotary, where said magnet head moves in a rotary path.

As for claim 10, Rosenberg teaches a flexible member 130a that bends toward or away from actuator 102b to allow the translation of object 12, when object 12 is moved simultaneously along both axes X and Y, then both flexible members 130a and 130b flex in conjunction with the movement (column 16, lines 46-51) corresponding to said core member and said magnet head include curved surfaces to form a curved gap, wherein said elastic material is positioned in said curved gap.

As for claim 18, Rosenberg teaches a mechanical apparatus 14 that is coupled to electronic interface 16 preferably includes a sensors 220, actuators 222, and mechanism 224. Sensors 220 sense the position, motion, and/or other characteristics of a user object 12 along one or more degrees of freedom and provide signals to microprocessor 200 including information representative of those characteristics (column 19, lines 65-67) and (column 20, lines 1-4) corresponding to a user manipulandum physically contacted by a user and moveable in at least one degree of freedom, at least one sensor that detects a position of said user manipulandum in said

at least one degree of freedom and provides a sensor signal to said host computer, said sensor signal including information representative of said position; and an actuator coupled to said haptic feedback device which outputs a vibration force transmitted to said user, said force correlated with an event or interaction within said graphical environment, wherein said actuator includes: a core portion 110a of housing 104a preferably extends down the center of the housing 104a through the center of coil head 106a (column 15, lines 30-32) corresponding to a core member, said core member being grounded to a ground member; a coil head 106a includes a coil 112a which is wrapped around the coil head, similar to the coil 84a of Fig. 3a (column 15, lines 32-34) corresponding to a coil wrapped around a central projection of said core member; magnets 90 can be provided on one side of coil 84a, and the other magnet 90 can be similarly shaped piece of metal that provides a flux return path, preferably, a small amount of space is provided between the magnet surfaces and the coil 84a (column 13, lines 30-34) corresponding to a magnet head positioned so as to provide a gap between said core member and said magnet head, wherein said magnet head is moved in a degree of freedom based on an electromagnetic force caused by a current flowed through said coil; and a shaft 120a' that is coupled to a flexible member 130a, flexible members 130a and 130b are preferably made of a resilient material such as flexible plastic, rubber, metal, or the like and can flex in a degree of freedom.... (column 16, lines 20-26) corresponding to an elastic material positioned in said gap between said magnet head and said core member, wherein said elastic material is compressed and sheared when said magnet head moves and substantially prevents movement of said

magnet head past a range limit, said range limit based on an amount to which said elastic material may be compressed and sheared.

As for claim 19, Rosenberg teaches an intuitive feedback as to the degree of pressure applied by the user (column 37, lines 13-14) corresponding to said actuator is coupled to a housing of said haptic feedback device such that said vibration force is transmitted to said user through said housing.

As for claim 20, Rosenberg teaches a magnetic fields from magnets 90 interact with the magnetic field produced from wired coil 84a when current is flowed in coil 84a to produce a linear force to board 72 in direction parallel to axis Y shown by arrow 78b (column 13, lines 60-63) corresponding to said degree of freedom is a linear degree of freedom, and wherein said magnet head is oscillated in said linear degree of freedom to provide said vibration force.

As for claim 21, Rosenberg teaches a rotary joint 124a couples shaft 120a to joint member 122a and allows joint member 122a to rotate about floating axis Z, a second end of joint member 122a is rotatably coupled to a second end of joint member 122b by a rotary joint 126 which provides an axis of rotation Z3 (column 15, lines 50-54) corresponding to said degree of freedom is a rotary degree of freedom, and wherein said magnet head is oscillated in said rotary degree of freedom to provide said vibration force.

As for claim 22, Rosenberg teaches a resilient material such as a flexible plastic or the like and can be flex in a degree of freedom (column 16, lines 22-23) corresponding to at least one flexible member coupled between said magnet head and

a ground member of said haptic feedback device, said flexible member flexing to allow said magnet head to move in said degree of freedom.

As for claim 23, Rosenberg teaches a mechanical apparatus 14 interfaces mechanical input and output between the user manipulatable object 12 and host computer 18 implementing the simulation or game environment. Mechanical interface 14 provides multiple degrees of freedom to object 12 (column 7, lines 18-22) corresponding to said haptic feedback device is a gamepad controller and said user manipulandum is a joystick moveable in two degrees of freedom.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (703) 308-6413. The examiner can normally be reached on from Monday to Friday between 8:OOAM and 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709 .

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Art unit 2674

Date 1-13-2003